

AMENDMENTS TO THE CLAIMS

1-2. (Cancelled)

3. (Previously Presented) The exhaust gas purifying apparatus as defined in claim 23, wherein an amount of oxygen adsorbed on said light-off catalyst is not greater than about 150 cc per one-liter volume of the catalyst when measured by an oxygen pulse method.

4. (Previously Presented) The exhaust gas purifying apparatus as defined in claim 3, wherein an oxygen component stored in said light-off catalyst is not greater than about 25 g per one-liter volume of the catalyst.

5. (Cancelled)

6. (Previously Presented) The exhaust gas purifying apparatus as defined in claim 23, wherein an amount of oxygen adsorbed on the three-way catalyst of said exhaust gas purifying means is not greater than about 150 cc per one-liter volume of the catalyst when measured by an oxygen pulse method.

7. (Previously Presented) The exhaust gas purifying apparatus as defined in claim 6, wherein an oxygen component stored in the three-way catalyst of said exhaust gas purifying means is not greater than about 25g per one-liter volume of the catalyst.

8. (Previously Presented) The exhaust gas purifying apparatus as defined in claim 23, wherein the internal combustion engine is a spark ignition type four-cycle engine that operates on the four-stroke cycle consisting of a suction stroke, compression stroke, combustion/expansion stroke, and exhaust stroke.

9. (Original) The exhaust gas purifying apparatus as defined in claim 8, wherein the internal combustion engine is an in-cylinder injection type engine in which fuel is directly injected into a combustion chamber.

10. (Previously Presented) The exhaust gas purifying apparatus as defined in claim 23, wherein the exhaust gas purifying means is a single catalyst.

11. (Previously Presented) The exhaust gas purifying apparatus as defined in claim 10, wherein the single catalyst of the exhaust gas purifying means includes a function of the three-way catalyst.

12. (Previously Presented) The exhaust gas purifying apparatus as defined in claim 10, wherein the light-off catalyst includes a single catalyst that functions as the three-way catalyst.

13. (Previously Presented) The exhaust gas purifying apparatus as defined in claim 12, wherein the exhaust gas purifying means further functions also as the NOx catalyst.

14. (Previously Presented) The exhaust gas purifying apparatus as defined in claim 13, wherein the light off catalyst functions also as an SOx catalyst.

15. (Previously Presented) The exhaust gas purifying apparatus as defined in claim 23, wherein said condition where the oxygen concentration of the exhaust gas is reduced includes at least one of a stoichiometric operating condition and a fuel rich operating condition.

16. (Previously Presented) An exhaust gas purifying apparatus as defined in claim 23, wherein said light-off catalyst mainly purifies HC in an exhaust gas emitted from the engine in a cold state.

17. (Previously Presented) An exhaust gas purifying apparatus as defined in claim 23, wherein said light-off catalyst is provided in the exhaust passage immediately downstream of the internal combustion engine.

18. (Previously Presented) An exhaust gas purifying apparatus as defined in claim 23, wherein said light-off catalyst has a reduced O₂ storage capability per one liter volume of the catalyst.

19. (Previously Presented) An exhaust gas purifying apparatus as defined in claim 18, wherein said light-off catalyst includes a three-way catalyst.

20. (Previously Presented) An exhaust gas purifying apparatus as defined in claim 18, wherein said light-off catalyst includes an oxidizing catalyst.

21. (Previously Presented) An exhaust gas purifying apparatus as defined in claim 18, wherein said control means sets the air-fuel ratio leaner as compared to an air-fuel ratio required to release the adsorbed NO_x from the NO_x catalyst when the NO_x catalyst is used in conjunction with a three-way catalyst in which the O₂ storage capability is not reduced.

22. (Cancelled)

23. (Currently Amended) An exhaust gas purifying apparatus of an internal combustion engine, comprising:

a light-off catalyst provided in an exhaust passage and having an O₂ storage capability such that said light-off catalyst passes,

there through, at least CO in an exhaust gas to a downstream side of said light-off catalyst when the internal combustion engine is operating under a condition where the oxygen concentration of the exhaust gas is reduced;

exhaust gas purifying means provided in the exhaust passage at a downstream position of and in series with said light-off catalyst, said exhaust gas purifying means having a NO_x catalyst for adsorbing NO_x in the exhaust gas when an air-fuel ratio of the exhaust gas is lean and releasing the adsorbed NO_x when the oxygen concentration of the exhaust gas is reduced, said exhaust gas purifying means further having a three-way catalyst that reacts with the released NO_x;

wherein the light-off catalyst has an oxygen storage capability of a first value and the three-way catalyst of the exhaust gas purifying means has an oxygen storage capability of a second value greater than said first value, said first and second values being per one liter of catalyst;

and

NO_x regeneration control means for repeatedly releasing NO_x adsorbed by the NO_x catalyst every first interval outside the temperature range where SO_x is releasable, and separate SO_x regeneration control means independent from said NO_x regeneration control means for repeatedly releasing SO_x adsorbed by the NO_x

catalyst every second interval, said second interval being independent from and longer than the first interval and determined independently from said first interval.

24. (Previously Presented) An exhaust gas purifying apparatus as claimed in claim 23, comprising control means for recovering the NOx catalyst by reducing the oxygen concentration in the exhaust gas such that said CO that has passed through said light-off catalyst is introduced to said NOx catalyst when a NOx conversion efficiency of the NOx catalyst is decreased and maintaining the reduced oxygen concentration until the absorbed NOx in said NOx catalyst is released outside the temperature range where SOx is releasable,, calculating the NOx conversion efficiency after the recovery, and regenerating the NOx catalyst to release SOx only when the NOx conversion efficiency, calculated after the recovery, is less than a threshold value.